

REMARKS

Claims 1, 4-8, 10 and 13-16 are all the claims pending in the application, where claims 2, 3 and 11 are canceled.

I. Objections to the Specification

The Examiner asserts that correction is required with regard to the phrase “the ends of the at least one coil element connect the coil element of the slot-in portion in the plurality of slots, [and] distances between adjacent, parallel ends of the at least one coil element in the cross-over portion are different” as recited in claim 11.

Claim 11 is canceled without prejudice or disclaimer. Accordingly the Examiner’s objection is made moot.

II. Objections to the Drawings

The drawings are objected to under 37 C.F.R. § 1.83(a). Specifically, the Examiner asserts that the claimed feature of “the ends of the at least one coil element connect the coil element of the slot-in portion in the plurality of slots, [and] distances between adjacent, parallel ends of the at least one coil element in the cross-over portion are different” as recited in claim 11 is not shown in the drawings.

Claim 11 is canceled without prejudice or disclaimer. Accordingly the Examiner’s objection is made moot.

III. Claim Rejections under 35 U.S.C. § 112

Claims 11 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. With respect to claim 11, the Examiner asserts that there is insufficient written support for the feature of “the ends of the at least one coil element connect the coil element of the slot-in portion in the plurality of slots, [and] distances between adjacent, parallel ends of the at least one coil element in the cross-over portion are different” as recited in the claim.

Claim 11 is canceled without prejudice or disclaimer. Accordingly the Examiner’s rejection is made moot.

IV. Claim Rejections under 35 U.S.C. § 103

Claims 1, 3, 4, 7 and 13 are rejected under 35 U.S.C. § 103(a)¹ as being unpatentable over Fujita et al. (U.S. Publication No. 2002/0043886; hereinafter “Fujita”) and Oohashi et al. (U.S. Publication No. 2003/0015932; hereinafter “Oohashi ‘932”). Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Umeda et al. (U.S. Patent No. 5,936,326; hereinafter “Umeda”). Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Asao et al. (U.S.

¹ Applicant notes that the Examiner incorrectly indicates this as a rejection under 35 U.S.C. § 102(b). Since the Examiner acknowledges that Fujita fails to teach or suggest all the claimed features recited in independent claim 1 (Office Action, page 5), and instead relies on Oohashi ‘932 to address the deficiencies of Fujita, the proper statute for the rejection is 35 U.S.C. § 103(a). Applicant will treat the rejection as such.

Patent No. 6,281,612; hereinafter “Asao”). Claims 6 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Oohashi et al. (U.S. Publication No. 2002/0096958; hereinafter “Oohashi ‘958”). Claims 8 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Ohashi et al. (U.S. Patent No. 6, 018,205; hereinafter “Ohashi ‘205”). Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Oohashi et al. (EP 1294076; hereinafter “Oohashi ‘076”). Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Yumiyama et al. (U.S. Patent No. 5,587,619; hereinafter “Yumiyama”). Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita and Oohashi ‘932 in further view of Oohashi et al. (U.S. Patent No. 6,417,585; hereinafter “Oohashi ‘585”). For at least the following reasons, Applicant respectfully traverses the rejection.

Claims 2, 3 and 11 are canceled without prejudice or disclaimer. Accordingly the Examiner’s rejections with respect to these claims are made moot.

Claim 1 is amended and recites an AC generator for a vehicle comprising, *inter alia*,

a housing directly supporting a periphery of the stator core and protecting the electrical conductor, wherein the stator core is constituted by laminated core having a plurality of slots each extending to an axial direction, the electrical conductor is comprised of a slot-in portion located in the slots and a cross-over portion connecting each of the slot-in portions at the shaft end side of the stator,

wherein the conductor is formed of a previously coated insulated wire and the slot-in portion of the conductor is molded to be substantially rectangular in its cross-sectional profile before it is entered in the slots so that at a least longer side portion of the conductor of the slot-in portion located in the slots has an insulation coating of which thickness is smaller than that of insulation coating in the cross-over portion, and

wherein the slot-in portions of the conductor are accumulated in the slots so that a longer side thereof is being in the radial direction without any air space and a shorter side thereof in a circumferential direction, and the cross-over portion is kept substantially circular in its cross-sectional profile without being molded.

According to an exemplary, non-limiting embodiment, the present invention is characterized in that, the conductor is formed of previously coated insulated wire, and the slot-in portion of the conductor is molded to substantially rectangular in its cross-sectional profile before it is entered in the slots so that at least a longer side portion of the conductor has an insulation coating of which thickness is smaller than that of insulation coating in the cross-over portion. The slot-in portions of the conductor are accumulated in the slots so that a longer side thereof is in the radial direction without any air space and a shorter side thereof in a circumferential direction, the cross-over portion is kept substantially circular in its cross-sectional profile without being molded, and the longer side thereof being tightly contacted with the inner surface of the slot in a wide area. Because the laminated core is directly supported to the housing, heat generated by armature windings can be easily transmitted to the laminated core through a thinner insulated coating and dissipated in the radial direction to the housing through the periphery of the laminated core, resulting in further enhancement of the output power and

efficiency of the generator. That is, because of this configuration, the present invention can improve heat dissipation efficiency and decrease the amount of insulated coating such as varnish or resin which is applied to coil ends after completion of coil winding to the core. It will be appreciated that the foregoing remarks relate to the invention in a general sense, the remarks are not necessarily limitative of any claims and are intended only to help the Examiner better understand aspects of the claim mentioned above.

Fujita is provide with an insulated coating 26 such as a varnish or resin which is applied to coil ends after completion of coil winding to the core, as shown in the embodiment 9 (Fig. 12). However, Fujita does not teach or suggest a previously coated insulated wire (i.e. conductor) as recited in amended claim 1.

Fujita also does not teach or suggest the molding of a previously coated insulated wire to be substantially rectangular in its cross-sectional profile before it is entered in the slots so that at least a longer side portion of the conductor of the slot-in portion located in the slots has an insulation coating of which thickness is smaller than that of the insulation coating in the cross-over portion, as recited in amended claim 1. Fujita also fails to disclose or suggest that the slot-in portion is accumulated in the slots without any air space.

Neither Oohashi '932, Umeda, Oohashi '958, Ohashi '205, Oohashi '076, Oohashi '585, Kusase nor Yumiyama, independently or in combination, address this deficiency of Fujita and Oohashi '932.

Accordingly, Applicant respectfully submits that claim 1 is patentable over the applied references. Applicant further submits that claims 4-8, 10 and 13-16 are patentable at least by virtue of their dependency on claim 1.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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